

Boskamp, Eddy B.

S/N: 10/063,550

**REMARKS**

Claim 1-4, 6-8, 10-18, and 20-28 are pending in the present application. In the final Office Action mailed February 11, 2004, the Examiner rejected claims 1, 2, 4, 6, 7, 17, 19, 20-23, and 25-28 under 35 U.S.C. §102(b) as being anticipated by Leussier (USP 5,245,288). The Examiner next rejected claims 3, 8, 10-16, and 24 under 35 U.S.C. §103(a) as being unpatentable over Leussier and further in view of Schotz et al. (USP 5,581,617). Claims 20 was rejected under 35 U.S.C. §103(a) as being unpatentable over Leussier and further in view of Goto (USP 6,218,834 B1).

**FINALITY OF OFFICE ACTION**

Before substantively addressing the rejection with respect to each claim, Applicant wishes to note that although the current rejection is based upon art previously not of record, the Examiner made the current Office Action Final. Upon reviewing the finality of the current Office Action, Applicant contacted the Examiner to question whether the finality of the current Office Action was proper given that the previous basis for rejection was removed and a new basis for rejection was articulated predicated upon art not previously made of record. The Examiner responded by agreeing that the finality of the current Office Action was premature and requested Applicant to request withdrawal of the finality in this next response. The Examiner agreed to remove the finality. Applicant appreciates the Examiner's receptiveness on this matter and hereby requests removal of the finality as premature.

**SUBSTANTIVE RESPONSE**

Regarding claim 1, in the Amendment/Response mailed November 4, 2003, Applicant amended claim 1 to incorporate the allowable subject matter of claim 5. As the Examiner indicated in the Response to Arguments Section, Applicant's previous arguments with respect to the previous grounds of rejection were considered but "are moot in view of the new ground(s) of rejection." Therefore, the amendment of claim 1 and the arguments proffered with respect to the previous grounds of rejection are no longer germane in light of this new ground of rejection. The new grounds of rejection articulated by the Examiner in the current Office Action includes a rejection of all claims pending. Accordingly, Applicant has amended claim 1 to remove the previous amendment and has represented claim 5.

Regarding claim 1 and with respect to the new grounds of rejection, Applicant has amended claim 1 to further clarify the claimed invention. Claim 1, as amended, calls for "an oscillator configured to generate a carrier signal." Furthermore, claim 1 calls for "a modulator

Boskamp, Eddy B.

S/N: 10/063,550

wired to the oscillator to modulate the carrier signal” (emphasis added). Claim 1 is clearly distinguishable over Leussler in that communication from the oscillator 200 to the block circuit 100 is achieved via wireless transmission between antenna 226 and antenna 121. Therefore, Leussler does not teach a wired modulator and oscillator, as claimed and as shown in Fig. 2.

Accordingly, claim 1 is believed patentably distinct from the art of record. Furthermore, claims 2- 6 are in condition for allowance pursuant to the chain of dependency.

Regarding claim 7, Applicant has amended the claim to clarify that the kit while “configured to retrofit an existing MRI apparatus to wirelessly transmit an MR signal from a receive coil... to a receiver,” does not include components configured to retrofit the existing MRI apparatus to wirelessly transmit data to the receive coil. Specifically, to this end, Applicant has amended claim 7 to clarify that the kit consists of a modulator, a transmitter, and a receiver to transmit an MR signal from a receive coil. Applicant has amended the claim to consist of these components rather than comprise the components for the sole purpose of excluding components configured to wirelessly transmit data to the receive coil. Applicant intends to limit claim 7 for this sole purpose.

Again, Leussler is clear that all transmission to and from the receive coil 10 and accompanying circuit block 100 is achieved wirelessly via input antennas 226 and 221 and output antennas 115 and 210. Leussler is clear that all components of the circuit block 100 may be “mounted on a suitable substrate... so that this unit can be used for other coils.” (Col. 4, lns. 46-50) Therefore, any kit, as taught by Leussler, necessarily would have to include the components of circuit block 100 which are particularly designed for wireless transmission to and from the circuit block 100. Leussler does not teach any other arrangement. The presently claimed configuration is an improvement over Leussler in that it requires less components and by limiting wire transmission, there is less chance of interference.

Therefore, as claim 7 is particularly limited to not include wireless transmission of data to the receive coil, claim 7 calls for a kit that is patentably distinct from any kit specifically taught by Leussler. See Col. 4, lns. 46-50. Accordingly, claims 23-27 are in condition for allowance pursuant to the chain of dependency.

Regarding claim 8, the claim calls for “an RF modulator configured to modulate a UHF carrier frequency with the MR signal” (emphasis added). While the Examiner acknowledged that Leussler fails to teach modulation and transmission at a UHF frequency, the Examiner asserted that such is obvious under Leussler in view of Schotz.

Boskamp, Eddy B.

S/N: 10/063,550

The burden, however, of establishing a *prima facie* case of obviousness falls on the Examiner. MPEP §2142.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP §2143

Applicant believes that a *prima facie* case of obviousness cannot be made based on the art of record because, as will be shown below, (1) the references are directed to different purposes and there is no motivation to combine these references in a way done so by the Examiner, other than Applicant's own teaching; (2) the combination would not have a reasonable expectation of success; and (3) all the elements of the present claims are not present in the references. The Examiner has not established the three basic criteria required under MPEP §2143.

Leussler is specifically directed to the wireless transmission of spin resonance signals from an MR examination apparatus. See title of Leussler. On the other hand, Schotz et al., as is indicated in the very section cited by the Examiner, is particularly concerned with the short range transmission of audio data from an audio system to an audio source. Col. 2, lns. 40-50. As such, the references are directed to very different purposes and there is no motivation to combine these references in the way done so by the Examiner. In fact, Leussler specifically teaches away from any transmission frequency substantially greater than "a few MHz to a few 100 MHz." Col. 3, lns. 67-68. Leussler teaches that "the spin resonance signal is mixed with a mixing signal of constant frequency  $f_1$ ." Col. 3, lns. 55-57. Leussler continues by teaching that the transmission output signal "contains components having the difference frequency  $f_1 - f_0$  or the sum frequency  $f_1 + f_0$ ." Col. 3, lns. 60-62. Finally, Leussler teaches that "[t]he frequency  $f_1$  of the mixing signal is chosen (from a few MHz to a few 100 MHz)." Col. 3, lns. 67-68. Therefore, one of ordinary skill in the art will readily recognize that since the mixing frequency  $f_1$  is chosen from between a few MHz to at most a few 100 MHz, the highest output frequency of any output signal would be only slightly more than a few hundred MHz. That is, since the output signal "contains components having the difference frequency  $f_1 - f_0$  or the sum frequency  $f_1 + f_0$ " and  $f_1$  is chosen from between a few

Boskamp, Eddy B.

S/N: 10/063,550

MHz to a few 100 MHz the sum frequency could never be more than a few 100 MHz. *See* col. 3, lns. 55–68. As such, Leussler teaches away from modulation and transmission of carrier frequencies in the UHF range. Therefore, under MPEP §2142, a combination of Leussler and Schotz et al. is impermissible.

Therefore, as claim 8, in part, calls for “an RF modulator configured to modulate a UHF carrier frequency with the MR signal,” claim 8 is believed patentably distinct from the art of record. Furthermore, claims 10–16 are in condition for allowance pursuant to the chain of dependency.

Regarding claim 17, the claim, like claim 1, was amended to incorporate the subject matter of claim 19 indicated as allowable under the previous grounds of rejection. As the previous grounds of rejection have been removed in favor of the current grounds of rejection, Applicant has amended claim 17 to remove the previously incorporated subject matter of claim 19 and hereby represents claim 19.

However, Applicant has amended claim 17 to further clarify the claimed invention. Specifically, Applicant has amended claim 17 to add “battery-less means for powering the means for wirelessly transmitting.” Therefore, claim 17 is clear that the means for wirelessly transmitting the signal to a receiver means is powered by means that does not include a battery, i.e., battery-less means. On the other hand, Leussler is clear that “it is not possible to power the transmitter arranged near the coil system with a supply voltage derived from a main power supply because such a main supply unit would also require a cable for connection to a supply voltage source.” Col. 2, lns. 36–40. As such, Leussler is clear that the transmitter must be powered by a battery. *See* col. 2, lns. 8–9 and 41–42, col. 6, lns. 15–16. Leussler is clear that a battery is necessary for powering of any transmission means. At most, Leussler allows a slight deviation from dependency on the battery. That is, “[w]hen the energy consumption of the components 111... 126 is sufficiently low, the power supply voltage can also be derived directly from the high frequency pulses.” Col. 6, lns. 51–54 (emphasis added). Therefore, Leussler teaches dependence upon the battery for powering any means for wirelessly transmitting (components 111... 126) and only allows supplementing the battery-supplied power “[w]hen the energy consumption of the components 111... 126 is sufficiently low.” Col. 6, lns. 51–52.

Boskamp, Eddy B.

S/N: 10/063,550

For at least these reasons, claim 17 is patentably distinct from the art of record. Accordingly, claims 18-22 are in condition for allowance pursuant to the chain of dependency.

Regarding claim 21, Applicant has amended the claim to clarify the invention in light of the amendments to claim 17.

Regarding claim 28, Applicant has also amended this claim to further clarify the invention. Claim 28, as amended, calls for "an RF transceiver system wired to a modulator." Claim 28 has been amended to clarify that the modulator is configured to modulate a carrier signal which is transmitted wirelessly from a transmitter. As previously shown with respect to claim 1, Leussler teaches that all communication into and out of circuit block 100 is achieved by way of wireless communication via antennas 121, 226, 115, and 210. Accordingly, claim 28 is believed to define over the art of record.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-8 and 10-28.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



Timothy J. Ziolkowski  
Registration No. 38,368  
Direct Dial 262-376-5139  
[tiz@zpspatents.com](mailto:tiz@zpspatents.com)

Dated: March 15, 2004  
Attorney Docket No.: GEMS8081.091

**P.O. ADDRESS:**  
Ziolkowski Patent Solutions Group, LLC  
14135 North Cedarburg Road  
Mequon, WI 53097-1416  
262-376-5170